

Preharvest Use of Glyphosate Poisons Kids' Food

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STORY AT-A-GLANCE

- › Glyphosate-based herbicides like Roundup are the most heavily used agricultural chemicals of all time, with 1.76 million tons being applied to U.S. fields alone between 1974 and 2014
- › In August 2018, a jury ruled Monsanto owed \$289 million in damages to Dewayne Johnson, who developed a lethal form of Non-Hodgkin lymphoma following heavy exposure to Roundup during his work as a groundskeeper. The award was reduced by an appeals court to \$20.5 million
- › Glyphosate is also showing up in the food supply at potentially unsafe levels. Testing revealed 43 out of 45 food products made with conventionally grown oats tested positive for glyphosate
- › Thirty-one of the 43 products had glyphosate levels higher than Environmental Working Group scientists believe would be protective of children's health
- › Glyphosate has even been detected in PediaSure Enteral Formula nutritional drink, given to infants and children via feeding tubes; 30 percent of the samples tested contained levels of glyphosate over 75 ppb — far higher levels than have been found to destroy gut bacteria in chickens (0.1 ppb)

This article was previously published September 4, 2018, and has been updated with new information.

Glyphosate-based herbicides like Roundup are the most heavily used agricultural chemicals of all time, with 1.76 million tons being applied to U.S. fields alone between 1974 – when glyphosate was first approved – and 2014.¹

By the end of 2021, glyphosate usage had expanded so much that worldwide glyphosate sales were forecasted to reach \$4.95 billion by 2025.² Paradoxically, in early 2022 some farmers are looking to develop alternative, non-herbicide weed-control measures due to an expanded market and pandemic- and hurricane-related supply problems that have caused supply shortages and driven up the cost of glyphosate.³

Since the popularity of this herbicide was built on reckless deceit,⁴ and there's really no telling how many people around the world have paid for Monsanto's lies with their lives, it seems rather karmic that the COVID-19 pandemic, of all things, is what's driving farmers to farm more organically.

In August 2018, a jury ordered Monsanto to pay \$289 million in damages to Dewayne Johnson,^{5,6,7,8} who developed a lethal form of Non-Hodgkin lymphoma following heavy exposure to Roundup during his work as a groundskeeper. The evidence brought forth in court was extensive and extraordinarily damning, clearly showing Monsanto – now owned by Bayer – acted with malice.

The jury decided Monsanto knew Roundup was toxic and caused cancer, yet hid that fact from regulators and the public, fabricating evidence to the contrary and suppressing research showing harm. A California appeals court later reduced the award to \$20.5 million⁹ and in 2021 Bayer decided not to take that court's decision to the U.S. Supreme Court, letting the final award stand¹⁰ You can review key documents from this case on the U.S. Right to Know website.^{11,12}

You can also read "[Spinning Science & Silencing Scientists: A Case Study in How the Chemical Industry Attempts to Influence Science](#),"¹³ a report prepared for U.S. House members of the Committee on Science, Space and Technology, which details some of the most important pieces of evidence.

'Nothing Short of a Cover-Up'

In a 2018 Highwire interview,¹⁴ Robert F. Kennedy Jr. and Brent Wisner, lawyers for some of these cases, said other disease categories could eventually be added to the growing mountain of lawsuits against Monsanto, as evidence suggested glyphosate and/or Roundup may also be linked to liver cancer, brain tumors and health problems associated with endocrine disruption.

"We've got hundreds of documents, far more damning than these, showing absolutely definitive misconduct" of Monsanto hiding Roundup's risk to the public, Wisner told Bigtree. Since then, more than 5,000 additional plaintiffs quickly lined up for their own day in court,¹⁵ all alleging Roundup exposure caused their Non-Hodgkin lymphoma.

The cases soon began plodding through the courts, with another plaintiff, Edwin Hardeman, winning an \$80 million judgment.¹⁶ Hardeman filed his case in 2016; his ruling came in 2019. When Bayer-Monsanto appealed the verdict, a federal court ruled against them, awarding Hardeman a little over \$25 million after reducing the first jury's punitive damages from \$75 million to \$20 million.¹⁷

With more than 25,000 cases pending by November 2021,¹⁸ Bayer asked the SCOTUS to review Hardeman's case.¹⁹ Rather than just agreeing to hear the case, in December 2021, the SCOTUS deferred, and asked President Biden's administration to help them decide whether they should hear it. Ironically, Monsanto-Bayer is still maintaining their product is safe, and their attitude drew the ire of environmental journalist Dave Dickey, who wrote in a February 2022 commentary:²⁰

*"In March 2015 U.S District Judge for the Northern District of California **allowed public release** of internal Monsanto documents showing how Monsanto **influenced EPA to reclassify glyphosate** from a Class C carcinogen to a Class E category which paved the way for glyphosate Roundup production.*

It was nothing short of a cover-up that put greed ahead of public safety. And now ironically we learn the cover-up may have included Monsanto's own investors ... [who] are saying the German agri-giant played fast and loose with

the facts, misleading them on 1) the safety of glyphosate and Roundup; 2) Bayer's efforts at due diligence; and 3) the legal risks in the acquisition of Monsanto ...

Given all we already know Roundup and glyphosate should have not been unleashed on the world. But how companies like Monsanto are willing to go to almost any length – including duping its own investors – is a new low."

On its website, Bayer has now posted a five-point plan to end the litigation,²¹ claiming the SCOTUS has "strong legal arguments" to rule in the company's favor. And again, Monsanto-Bayer steadfastly insists not only that "glyphosate-based herbicides can be used safely and are not carcinogenic," but that "a cancer warning would be false and misleading and misbrand the product."

Glyphosate Found in Common Breakfast Foods and Snacks

Unfortunately, by 2018 the same chemical shown to cause Johnson's lethal disease was also showing up in the food supply at potentially unsafe levels. The Environmental Working Group (EWG) commissioned independent laboratory tests to determine how much glyphosate is lurking in the U.S. food supply.

While the U.S. Food and Drug Administration has been testing foods for glyphosate, and tests reportedly revealed "a fair amount" of residues, their findings have not yet been made public.²²

In fact, the USDA doesn't even test for glyphosate in some of the foods most known for glyphosate contamination, such as oats and chickpeas.²³ But EWG's testing in 2018 revealed 43 out of 45 food products made with conventionally grown oats tested positive for glyphosate, 31 of which had glyphosate levels higher than EWG scientists believe would be protective of children's health.

Examples of foods with detectable levels of glyphosate included Quaker Dinosaur Eggs instant oatmeal, Cheerios cereal, Nature Valley granola bars, Quaker steel cut oats and Back to Nature Classic Granola.

Further, of 16 organic oat foods tested, five contained glyphosate, although at levels below EWG's health benchmark of 160 parts per billion (ppb). In 2016, tests²⁴ conducted by the nonprofit organizations Food Democracy Now! and The Detox Project also found glyphosate residues in a variety of foods including Doritos, Oreos and Stacy's Pita Chips.

Glyphosate has even been detected in PediaSure Enteral Formula nutritional drink, which is given to infants and children via feeding tubes. Thirty percent of the samples tested contained levels of glyphosate over 75 ppb – far higher levels than have been found to destroy gut bacteria in chickens (0.1 ppb).²⁵

Children Likely Ingest Unsafe Levels of Glyphosate From Food

Exposure to glyphosate and glyphosate-based herbicide formulations, even at low levels, has been linked to a variety of health risks. For instance, one study found that daily exposure to ultra-low levels of glyphosate for two years led to nonalcoholic fatty liver disease in rats,²⁶ while the International Agency for Research on Cancer (IARC) determined that glyphosate is a "probable human carcinogen" in 2015.

As of July 2017, California's Environmental Protection Agency's Office of Environmental Health Hazard Assessment (OEHHA) also listed glyphosate as a chemical known to cause cancer under Proposition 65, which requires consumer products with potential cancer-causing ingredients to bear warning labels. According to EWG:²⁷

"OEHHA has proposed a so-called No Significant Risk Level for glyphosate of 1.1 milligrams per day for an average adult of about 154 pounds. That level of exposure is more than 60 times lower than the safety level set by the Environmental Protection Agency."

Exposure to glyphosate at OEHHA's risk level would present an increased lifetime risk of cancer of 1 in 100,000 for an adult, but EWG points out that an additional tenfold margin of safety may be necessary to protect those most vulnerable, like children and fetuses. Using this methodology, virtually all of the foods tested by EWG could be damaging to human health:²⁸

"With this additional children's health safety factor, EWG calculated that a 1-in-a-million cancer risk would be posed by ingestion of 0.01 milligrams of glyphosate per day. To reach this maximum dose, one would only have to eat a single 60-gram serving of food with a glyphosate level of 160 parts per billion, or ppb.

The majority of samples of conventional oat products from EWG's study exceeded 160ppb, meaning that a single serving of those products would exceed EWG's health benchmark ...

The EPA has calculated that 1- to 2-year-old children are likely to have the highest [glyphosate] exposure, at a level twice greater than California's No Significant Risk Level and 230 times EWG's health benchmark."

Why so Much Glyphosate in the Food Supply?

Most of the more than 280 million pounds of glyphosate sprayed on American crop fields each year²⁹ are used on genetically engineered (GE) crops³⁰ like Roundup-ready corn and soybeans, which are designed to withstand the chemical's otherwise lethal effects.

However, while choosing non-GMO foods would appear to be a good way to reduce your exposure to glyphosate, some grains, even if they're not GE, can be heavily contaminated with glyphosate. The reason for this is because the chemical is also used as a desiccant and/or preharvest treatment to speed ripening.

Essentially, by spraying glyphosate on the grain right before harvest, it dries (desiccates) the grain, making it easier to harvest. Desiccation is also used to improve profits, as farmers are penalized when the grain contains moisture. The greater the moisture content of the grain at sale, the lower the price they get.

While GMOs have been considered the most heavily contaminated, since the glyphosate is inside each cell of the GE plant, the preharvest application of glyphosate on non-GMO

grains appears to be the primary reason for why glyphosate is now found in virtually all foods tested.

It's also found in air,³¹ rain, groundwater and soils,³² municipal water supplies,³³ and urine.³⁴ An independent study even found it in vaccines, including pneumococcal, Tdap, hepatitis B (which is injected on the day of birth), influenza and MMR.³⁵

The MMR vaccine had the highest amounts at 2.671 ppb. Yet, when the investigating group, Moms Across America, asked the CDC and FDA to check into their findings with their own tests, they received a response with 50% of the pages redacted or blank.³⁶

GMO and Non-GMO Grains Heavily Contaminated With Glyphosate

According to a 2017 study³⁷ by University of California San Diego School of Medicine researchers, "The herbicide Roundup is sprayed onto genetically modified crops and applied as a desiccant to most small nongenetically modified grains."

So, whether we're talking about Roundup Ready GE crops or conventional, non-GE grains, glyphosate, the active ingredient in Roundup, "is found in these crops at harvest." In a statement, a spokesperson for Quaker acknowledged that glyphosate is commonly used preharvest:³⁸

"Glyphosate is commonly used by farmers across the industry who apply it preharvest. Once the oats are transported to us, we put them through our rigorous process that thoroughly cleanses them (dehulled, cleaned, roasted and flaked).

Any levels of glyphosate that may remain are significantly below any limits and well within compliance of the safety standards set by the Environmental Protection Agency (EPA) and the European Commission as safe for human consumption."

However, EWG's testing revealed one sample of Quaker oats with 1,300 ppb of glyphosate, and another with 1,100 ppb. Along with wheat and oats, other crops that are commonly desiccated with glyphosate include:

Lentils	Peas	Non-GE soybeans
Non-GE corn	Flax	Rye and buckwheat
Triticale	Canola	Millet
Sugar beets	Potatoes	Sunflowers

Why Do Farmers Use Glyphosate Preharvest?

Considering the toxicity of glyphosate and Roundup, using either as a desiccant is an unconscionable choice. As noted in a recent Producer article:³⁹

"Cereals Canada and other industry groups have warned farmers that glyphosate is under increased scrutiny. Therefore, when producers use glyphosate as a harvest aid, they must carefully adhere to label guidelines to prevent unacceptably high residue levels in the grain."

"When agronomists are asked about using glyphosate as a desiccant, the standard response is: 'glyphosate is not a desiccant,' which is tactful way of saying, 'if a producer plans to desiccate, he should use an actual desiccant.'"

The Monsanto pamphlet "Preharvest Staging Guide"⁴⁰ notes Roundup formulation "should not be used as a desiccant," as Roundup brand herbicides "work slower than a desiccant." Real Agriculture has also noted that "glyphosate is not a desiccant," doing "very little to increase dry-down rates."⁴¹ Yet, some farmers continue to use it to help speed up their wheat, barley and oats harvests, even though it's not registered as a desiccant.⁴²

Overall, the application of glyphosate "will only speed up harvest by a few days," Real Agriculture states. Still, applying glyphosate preharvest is a common practice to enhance ripening and some may use it as a desiccant anyway.⁴³ Improper timing may also contribute to contamination.

As explained by Michigan State University Extension in "Preharvest Options for Soybeans,"⁴⁴ it's important to make sure that all pods have lost all green color before using Roundup for desiccating. Additionally, the "Preharvest applications of glyphosate are not recommended for soybeans grown for seed regardless of trait, and these applications will not control glyphosate-resistant weeds."

General Mills Sued Over Glyphosate Residues

Farmers and food manufacturers better start reconsidering their use of glyphosate during preharvest, though, or prepare to face legal consequences. Just six days after Johnson's win against Monsanto, a class-action lawsuit was filed against General Mills in Florida. According to Food Navigator-USA:⁴⁵

"Plaintiff Mounira Doss argued that General Mills had a duty to disclose the presence of glyphosate in Cheerios cereal products, but failed to do so.

At 470 to 530 parts per billion, the levels of glyphosate Doss alleges were in Cheerios products tested by the Environmental Working Group in August 2018 are well below permitted EPA thresholds for glyphosate in grains (set at ... 30,000 ppb in grains, cereal group 15).

However, Doss argues that 'Scientific evidence shows that even ultra-low levels of glyphosate may be harmful to human health,' and notes that glyphosate recently joined the Prop 65 list of chemicals 'known to cause cancer ...' and was found by the International Agency for Research on Cancer (IARC) to be 'probably carcinogenic to humans.'"

Are Other Desiccants Safe?

Aside from the off-label use of glyphosate, two commonly used registered desiccants are paraquat and diquat. The question is, are they any safer than glyphosate? Food is not tested for these or other desiccants, and neither has received much media coverage.

However, Politico⁴⁶ pointed out that the European Food Safety Authority (EFSA) has expressed concerns over diquat, made by Syngenta. According to Politico, "the Swiss agrichemical giant has avoided an EU ban on the product after mounting a campaign to undermine the watchdog's findings."

Sound familiar? They've clearly taken a page right out of Monsanto's playbook. Documents released by EFSA to Politico "show the [European] Commission twice withdrew a proposal to remove ... diquat from the market after the company questioned the methodology behind EFSA's science."

According to EFSA,⁴⁷ diquat poses severe risks to agricultural workers. The chemical has the ability to disrupt the human hormonal system, and in some cases "exposure to the product ... exceeded acceptable levels by several thousand percent."⁴⁸ It's also been found to disrupt the reproductive cycles of both mammals and birds.

In the U.S., the National Institute for Occupational Safety and Health has linked at least five deaths to the chemical, along with thousands of illnesses. British research⁴⁹ has also found diquat is more likely to cause Parkinson's than paraquat — a chemical that's already been banned in the EU for its link to Parkinson's.

Overall, desiccants are not necessarily a required part of farming. The harvest can dry naturally, but it takes longer, and therefore costs more. However, the question we really need to ask ourselves is: at what price speed and profit? Is it really worth poisoning the food just to speed up ripening and drying?

Bayer Hurt by yet Another Monsanto Mistake

In the week following Johnson's verdict, Bayer stock fell by 18%, evaporating about \$14 billion of the company's market value (a loss equivalent to 21% of Monsanto's total acquisition value).⁵⁰ But Roundup toxicity wasn't the only cause for the stock tumble.

Traders also cited mounting lawsuits over dicamba-related crop damage as a driving factor.⁵¹ For the third year in a row, huge swaths of land have been destroyed by chemical burns from this toxic weed killer.

As feared by many critics, any crop that is not genetically engineered (GE) to be resistant to dicamba is severely damaged by even small amounts of the herbicide – be it food crops, gardens or trees; even other GE crops resistant to herbicides other than dicamba shrivel and die in its presence.

Monsanto promised its XtendiMax with VaporGrip formula would be less volatile and less prone to drift than older versions, but this appears to be yet another Monsanto fantasy. In 2017, 3.6 million acres of non-GE soybeans – a total of 4 percent of all soy grown in the U.S. – were destroyed by dicamba drift, according to Reuters.⁵²

As of July 2018, an estimated 1 million acres of nondicamba-resistant crops had been destroyed.⁵³ By 2021, thousands of farmers had reported their crops damaged by dicamba drift as far away as a mile and a half from the dicamba-sprayed fields.⁵⁴ Homeowners have also reported destruction of trees and private gardens.

Dicamba-resistant soy was supposed to replace the failed Roundup Ready line of soy but, according to Reuters,⁵⁵ the EPA "is now weighing such complaints as part of a high-stakes decision on the herbicide's future."

Without the XtendiMax formula, the dicamba-resistant soy is unlikely to stand a chance, seeing how older dicamba formulations are strictly regulated and are not permitted during growing season due to their volatility (high drift potential).

In June 2020 an appeals court revoked the EPA's 2018 extended approval of dicamba, stating that despite the fact that farmers who had pre-purchased the product could suffer some financial losses, the EPA had not provided sufficient evidence to support the approval.⁵⁶

"In response, EPA approved new dicamba licenses with some additional control measures that it asserted met the court's concerns," Ohio State News reported. "Now the

Biden administration is weighing how to address dicamba – and none too soon."⁵⁷

*"Farmers reportedly are seeing weeds that have **developed resistance to dicamba and other herbicides** recommended for use with a new generation of genetically engineered seeds. According to weed specialists, this is happening precisely because farmers are **using such large quantities of these chemicals** during the growing season."*

Either way, it's worth noting that both Roundup and dicamba have been linked to Non-Hodgkin lymphoma,⁵⁸ so whether we're growing Roundup Ready or dicamba-resistant crops, both pose serious health risks.

It remains to be seen whether EPA will continue to extend its approval for XtendiMax, take it off the market or implement stricter limits on its use. Either of the latter two options would be another deep blow for Bayer, which now owns Monsanto's portfolio of toxic flops and failures.

Monsanto-Bayer, as you'd expect, says it's confident EPA will extend its approval, but also urged seed sellers "to contact [EPA] to express support for the product," Reuters reports – a behind-the-scenes action that suggests they may not be quite as confident as they claim.

Where to Find Safer Food

There's little doubt that the presence of herbicides and pesticides in food pose a health risk, especially to young children. To minimize the risks to your family, consider buying organic produce and certified grass fed animal products. As the saying goes, "money talks," and to create change, we have to vote for the agricultural system we want with our pocketbooks.

While many grocery stores now carry organic foods, it's preferable to source yours from local growers whenever possible, as much of the organic food sold in grocery stores is imported. If you live in the U.S., the following organizations can help you locate farm-fresh foods:

Demeter USA – Demeter-USA.org provides a directory of certified Biodynamic farms and brands. This directory can also be found on [BiodynamicFood.org](https://www.biodynamicfood.org).

American Grassfed Association – The goal of the American Grassfed Association is to promote the grass fed industry through government relations, research, concept marketing and public education.

Their website also allows you to search for AGA-approved producers certified according to strict standards that include being raised on a diet of 100% forage; raised on pasture and never confined to a feedlot; never treated with antibiotics or hormones; born and raised on American family farms.

EatWild.com – EatWild.com provides lists of farmers known to produce raw dairy products as well as grass fed beef and other farm-fresh produce (although not all are certified organic). Here you can also find information about local farmers markets, as well as local stores and restaurants that sell grass fed products.

Weston A. Price Foundation – Weston A. Price has local chapters in most states, and many of them are connected with buying clubs in which you can easily purchase organic foods, including grass fed raw dairy products like milk and butter.

Grassfed Exchange – The Grassfed Exchange has a listing of producers selling organic and grass fed meats across the U.S.

Local Harvest – This website will help you find farmers markets, family farms and other sources of sustainably grown food in your area where you can buy produce, grass fed meats and many other goodies.

Farmers Markets – A national listing of farmers markets.

Eat Well Guide: Wholesome Food From Healthy Animals – The Eat Well Guide is a free online directory of sustainably raised meat, poultry, dairy and eggs from farms, stores, restaurants, inns, hotels and online outlets in the United States and Canada.

Community Involved in Sustaining Agriculture (CISA) – CISA is dedicated to sustaining agriculture and promoting the products of small farms.

The Cornucopia Institute – The Cornucopia Institute maintains web-based tools rating all certified organic brands of eggs, dairy products and other commodities, based on their ethical sourcing and authentic farming practices separating CAFO "organic" production from authentic organic practices.

RealMilk.com – If you're still unsure of where to find raw milk, check out Raw-Milk-Facts.com and RealMilk.com. They can tell you what the status is for legality in your state, and provide a listing of raw dairy farms in your area. The Farm to Consumer Legal Defense Fund⁵⁹ also provides a state-by-state review of raw milk laws.⁶⁰ California residents can also find raw milk retailers using the store locator available at www.OrganicPastures.com.

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